MICROPLASTIC INGESTION: HISTOPATHOLOGY FINDINGS IN THE LIVER, KIDNEY AND SPLEEN IN SPARUS AURATA (LINNAEUS, 1758)

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The histopathological findings due to the long-term low-density polyethylene microplastic (LDPE-MP) ingestion in reared gilthead seabream (Sparus aurata, Linnaeus, 1758*)* were studied under laboratory conditions. Fingerlings of Sparus aurata were fed with three different dietary regimes (control free, virgin and seawater exposed LDPE-microplastics diets) for 90 days followed by 30 days of depuration. Three sampling periods were considered (T0, T90 and T120)

Healthy appearance and histopathological lesions measured according to Bernet's semi-quantitative tool (Bernet et al., 1999) were recorded in liver, kidney and spleen of all sampled individuals. The selected tissues were fixed and processed using standard histological techniques. Following parameters were measured: number of melanomacrophages (kidney and spleen), presence of melanin/hemosiderin (spleen), presence of rodlet cells and lymphocytes (liver), number of eosinophils. No lesions were detected in any of the fish exposed to neither dietary regimes.

Preliminary statistical analysis shows no differences between the three dietary regimes indicating no effect of microplastic ingestion on the histopathology of the fish.

Reference:

Bernet, D., Schmidt, H., Meier, W., Burkhardt-Holm, P., & Wahli, T. (1999). Histopathology in fish: proposal for a protocol to assess aquatic pollution. Journal of Fish Diseases, 22(1), 25–34.

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